(19) World Intellectual Property Organization International Bureau





(43) International Publication Date 28 October 2004 (28.10.2004)

PCT

(10) International Publication Number WO 2004/092495 A3

(51) International Patent Classification7:

E04C 1/40

(21) International Application Number:

PCT/US2004/010488

(22) International Filing Date: 6 April 2004 (06.04.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 60/460,422

7 April 2003 (07.04.2003) US

(71) Applicant (for all designated States except US): B & H COATING, INC. [US/US]; 1938 Windsor Drive, Salisbury, MD 21801 (US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): HALL, Bruce, S. [US/US]; 616 Hunting Park Drive, Salisbury, MD 21801 (US).

(74) Agent: KERINS, John, C.; Miles & Stockbridge P.C., 1751 Pinnacle Drive, Suite 500, McLean, VA 22102-3833

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

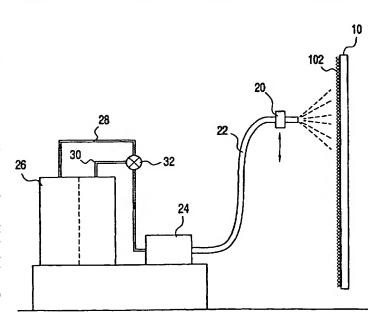
Published:

with international search report

(88) Date of publication of the international search report: 31 March 2005

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: SHRAPNEL CONTAINMENT SYSTEM AND METHOD FOR PRODUCING SAME



(57) Abstract: A system for containing shrapnel, includes a panel (100). The panel is made of an elastomeric material. The panel is blast-resistant.

PATENT COOPERATION TREATY From the INTERNATIONAL CHING AUTHORITY To: JOHN C KERING MILES & STOCKBRIDGE PC NOTIFICATION OF TRANSMITTAL OF 1751 PINNACLE DRIVE SUITE 500 THE INTERNATIONAL SEARCH REPORT AND Uct 1 3 2004 MCLEAN, VA 22102-3833 THE WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY, OR THE DECLARATION MILES & STOCKBRIDGE P.C. (PCT Rule 44.1) TYSONS CORNER Date of mailing (day/month/year) Applicant's or agent's file reference T3572-808375WO01 FOR FURTHER ACTION See paragraphs 1 and 4 below International application No. International filing date PCT/US04/10488 (day/month/year) 06 April 2004 (06.04.2004) Applicant **B&H COATINGS, INC** M The applicant is hereby notified that the mal search and the wrist ninio: : Internation g Authority have been established and are t. ...mitter ith. Fiting of annualments and statement The applicant is entitled, if he so wis ' cal application (se When? The time limit for fili rendments is normally as a facilities from the ages ne internat: search report. Directly to the International Bureau of WIPG 34 chemin des Colombettes 1211 Geneva 20, Switzerland, Facsimile No.: +41 22 740 14 35 For more detailed instructions, see the notes on the accompanying sheet. The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith. With regard to the protest against payment of (an) additional fcc(s) under Rule 40.2, the applicant is notified that: the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices. no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made. Reminders Shortly after the expiration of 18 months from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90bis. 1 and 90bis. 3, respectively, before the completion of the technical preparations for international publication. The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date. Within 19 months from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some Offices even later); otherwise, the applicant must, within 20 months from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices. In respect of other designated Offices, the time limit of 30 months (or later) will apply even if no demand is filed within 19 months. See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the PCT Applicant's Guide, Volume II, National Chapters and the WIPO Internet site.

P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230

Name and mailing address of the ISA/ US

Mail Stop PCT, Attn: ISA/US Commissioner for Patents

Authorized officer

PHI DIEU TRAN A V Hall

Telephone No. 703-872-9325

Form PCT/ISA/220 (January 2004)

(See notes on accompanying sheet)

Possible Suppl. IDS docketed # 3-10-05 in 3572-908375USØI

DO	CKETED
BY MY	ON 12/16
BY WY	ON 13 22
DUE DATE	2-10-05
CALL UP	
-	DKt 676

PATENT COOPERATION TREATY

From the INTERNATIONAL SECURING AUTHORITY				
To: JOHN C. KERINS MILES & STOCKBRIDGE PC 1751 PINNACLE DRIVE SUITE 500 MCLEAN, VA 22102-3833	PCT NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL SEARCH REPORT AND THE WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY, OR THE DECLARATION			
	(PCT Rule 44.1)			
	Date of mailing (day/month/year) 10 DEC 2004			
Applicant's or agent's file reference T3572-808375WO01	FOR FURTHER ACTION See paragraphs 1 and 4 below			
International application No. PCT/US04/10488	International filing date (day/month/year) 06 April 2004 (06.04.2004)			
Applicant B&H COATINGS, INC				
The applicant is hereby notified that the international sear have been established and are transmitted herewith.	rch report and the written opinion of the International Searching Authority			
Filing of amendments and statement under Article 19: The applicant is entitled, if he so wishes, to amend the cl	aims of the international application (see Rule 46):			
	s normally two months from the date of transmittal of the international			
Where? Directly to the International Bureau of WIPO 1211 Geneva 20, Switzerland, Facsimile No				
For more detailed instructions, see the notes on the a	accompanying sheet.			
2. The applicant is hereby notified that no international search Article 17(2)(a) to that effect and the written opinion of the				
3. With regard to the protest against payment of (an) addit	ional fee(s) under Rule 40.2, the applicant is notified that:			
the protest together with the decision thereon has be request to forward the texts of both the protest and t	en transmitted to the International Bureau together with the applicant's he decision thereon to the designated Offices.			
no decision has been made yet on the protest; the app	plicant will be notified as soon as a decision is made.			
4. Reminders				
Shortly after the expiration of 18 months from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90bis.1 and 90bis.3, respectively, before the completion of the technical preparations for international publication.				
The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.				
Within 19 months from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some Offices even later); otherwise, the applicant must, within 20 months from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.				
	s (or later) will apply even if no demand is filed within 19 months.			
See the Annex to Form PCT/IB/301 and, for details about the ap	pplicable time limits, Office by Office, see the PCT Applicant's Guide,			

Name and mailing address of the ISA/ US

Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
Facsimile No. (703) 305-3230
Form PCT/ISA/220 (January 2004)

Authorized officer

PHI DIEU TRANA V Hady

Telephone No. 703-872-9325

(See notes on accompanying sheet)

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference T3572-808375WO01		Form PCT/ISA/220 here applicable, item 5 below.		
International application No. PCT/US04/10488	International filing date (day/month/year) 06 April 2004 (06.04.2004)	(Earliest) Priority Date (day/month/year) 07 April 2003 (07.04.2003)		
Applicant B&H COATINGS, INC				
This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.				
This international search report consists of a total of sheets. It is also accompanied by a copy of each prior art document cited in this report.				
	- J. H P C C C C C C C	· · · · · · · · · · · · · · · · · · ·		
a. With regard to the language, the	 Basis of the Report a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item. 			
furnished to this Author	search was carried out on the basis of a tra rity (Rule 23.1(b)).			
b. With regard to any nucleoti	ide and/or amino acid sequence disclosed	in the international application, see Box No.		
2. Certain claims were found	unsearchable (See Box No. II)			
3. Unity of invention is lacking	ng (See Box No. III)			
	NZ			
the text is approved as subm	••			
the text has been established	by this Authority to read as follows:			
	BY BY			
	·	E DATE -10-05		
		LL UP		
5. With regard to the abstract,		LL UP		
the text is approved as subm	itted by the applicant.			
	, according to Rule 38.2(b), by this Author			
applicant may, within o to this Authority.	one month from the date of mailing of this in	nternational search report, submit comments		
6. With regard to the drawings, a. the figure of the drawings to be	published with the abstract is Figure No. $\underline{1}$			
as suggested by the	applicant.			
	Authority, because the applicant failed to su			
	Authority, because this figure better characte	erizes the invention.		
b. none of the figures is to be preform PCT/ISA/210 (first sheet) (January 20)	published with the abstract.			



In ational application No.

PC17US04/10488 Box IV TEXT OF THE ABSTRACT (Continuation of Item 5 of the first sheet) **NEW ABSTRACT** A system for containing shrapnel, includes a panel (100). The panel is made of an elastomeric material. The panel is blast-

Form PCT/ISA/210 (continuation of first sheet(3)) (January 2004)

A. CLASSIFICATION OF SUBJECT MATTER				
` '	IPC(7) : E04C 1/40			
	US CL: 52/782.1, 409, 411, 506.01, 796.1, 800.1 According to International Patent Classification (IPC) or to both national classification and IPC			
	DS SEARCHED	nauonai ci	assification and IPC	<u> </u>
	ocumentation searched (classification system followe 52/782.1, 409, 411, 506.01, 796.1, 800.1	ed by classi	fication symbols)	
0.5	52,702.1, 405, 411, 500.01, 750.1, 600.1			
NONE NONE	tion searched other than minimum documentation to t	the extent th	hat such documents are include	d in the fields searched
NONE				•
Electronic d	lata base consulted during the international search (na	ame of data	base and, where practicable is	earch terms used)
NONE	(out in the practicable, is	caren terms asca)
C. DOC	CUMENTS CONSIDERED TO BE RELEVANT			
Category *	Citation of document, with indication, where	annronriata	of the relevant passages	Deleverate state N.
X	US 6,460,304 A (KIM) 08 OCTOBER 2002 (08.1			Relevant to claim No.
11	00 0,400,504 A (MM) 08 0010BER 2002 (08.1	0.2002), F	OURE 4	1-27
Α	US 3,029,172 A (GLASS) 10 APRIL 1962 (10.04	. 1962) FIG	URE 2	1-27
		•		
Α	US 4,226,071 A (BENNETT) 07 OCTOBER 1980 (07.10.80) FIGURE 2			1-27
	i de la companya de			
) ·
			·	
				Í
	<u> </u>			
Further	r documents are listed in the continuation of Box C.		See patent family annex.	
* S	pecial categories of cited documents:	"T"	later document published after the int	ernational filing date or
"A" documen	t defining the general state of the art which is not considered to		priority date and not in conflict with	the application but cited to
	ticular relevance		understand the principle or theory un	derlying the invention
"E" earlier an	earlier application or patent published on or after the international filing date		document of particular relevance; the considered novel or cannot be considered.	
			step when the document is taken alone	sted to myotve an inventive
"L" document	document which may throw doubts on priority claim(s) or which is cited		document of particular relevance; the	claimed invention cannot be
to establish the publication date of another citation or other special reason		considered to involve an inventive step w		p when the document is
(as specified)			combined with one or more other such combination being obvious to a person	
"O" document referring to an oral disclosure, use, exhibition or other means		"&"		
"P" document published prior to the international filing date but later than the			raumy	
Date of the actual completion of the international search Date of the actual completion of the international search Date of the international search report				
				on report
10 November 2004 (10.11.2004)				
Name and mailing address of the ISA/US			,	,
Mail Stop PCT, Attn: ISA/US Commissioner for Patents		PHI DIE	UTRANA VHONGE	
P.O. Box 1450 Alexandria, Virginia 22313-1450 Telephone No. 703-872-9325			8	
Facsimile No. (703) 305-3230				

Form PCT/ISA/210 (second sheet) (January 2004)

PATENT COOPERATION TREATY From the INTERNATIONAL SEARCHING ORITY JOHN C. KERINS MILES & STOCKBRIDGE PC 1751 PINNACLE DRIVE WRITTEN OPINION OF THE SUITE 500 INTERNATIONAL SEARCHING AUTHORITY MCLEAN, VA 22102-3833 (PCT Rule 43bis.1) Date of mailing (day/month/year) Applicant's or agent's file reference FOR FURTHER ACTION See paragraph 2 below T3572-808375WO01 International application No. International filing date (day/month/year) Priority date (day/month/year) PCT/US04/10488 06 April 2004 (06.04.2004) 07 April 2003 (07.04.2003) International Patent Classification (IPC) or both national classification and IPC IPC(7): E04C 1/40 and US Cl.: 52/782.1, 409, 411, 506.01, 796.1, 800.1 Applicant **B&H COATINGS, INC** 1. This opinion contains indications relating to the following items: Box No. I Basis of the opinion Box No. II Priority Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability Box No. IV Lack of unity of invention Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement DOCKETED Box No. VI Certain documents cited Box No. VII Certain defects in the international application Box No. VIII Certain observations on the international application 2. FURTHER ACTION If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an

Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis (b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later. For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/ US

Mail Stop PCT, Attn: ISA/US Commissioner for Patents

P.O. Box 1450 Alexandria, Virginia 22313-1450

Facsimile No. (703) 305-3230

Authorized officer

PHI DIEU TRAN A J Hoodg

Telephone No. 703-872-9325

Form PCT/ISA/237 (cover sheet) (January 2004)

WRITTEN JION OF THE INTERNATIONAL SEARCHING AUTHORITY

	International	cation No.
ì	DOM/11/00 4/4 0400	
	PCT/US04/10488	
_		

Box No. I Basis of this opinion
1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
This opinion has been established on the basis of a translation from the original language into the following language which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
a. type of material
a sequence listing
table(s) related to the sequence listing
b. format of material
in written format
in computer readable form
c. time of filing/furnishing
contained in international application as filed.
filed together with the international application in computer readable form.
furnished subsequently to this Authority for the purposes of search.
. , , , , , , , , , , , , , , , , , , ,
3. In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:
Form PCT/ISA/237(Box No. I) (January 2004)

International lication No.	•
PCT/US04/	

NO

Box No. V Reasoned statement under Rule 43 bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1.	Statement			
	Novelty (N)	Claims	1-13,18-19, 25-27	YES
		Claims	14-17, 20-24	NO
	Inventive step (IS)	Claims	NONE	YES
		Claims	1-27	NO
	Industrial applicability (IA)	Claims	1-27	YES

Claims NONE

2. Citations and explanations:

Claims 14-17, 20-24 lack novelty under PCT Article 33(2) as being anticipated by Kim (6460304).

Kim (figures 4, 10) shows a blast resistant panel comprising a layer of an elastomer material (30) having a predetermined thickness, fastener elements (11) for securing the layer to a wall of a structure, the layer is made of polyurea, polyurethane, a channel member (A) secured to the panel around at least a portion of a periphery thereof, the panel further comprising a fabric reinforcing layer (20), the elastomeric material having a percent elongation at break in a range of about 100-800% (inherently so), the material having a tensile strength greater than about 2000 PSI (inherently so as it is the same material as that of applicant's).

Claims 1-13 lack an inventive step under PCT Article 33(3) as being obvious over Kim (6460304).

Kim shows all the claimed structural limitations. The claimed method steps of improving blast resistant at an interior of a wall of a structure would have been the obvious method steps of reinforcing Kim's structure.

Claims 18-19 lack an inventive step under PCT Article 33(3) as being obvious over Kim (6460304).

Kim shows all the claimed structural limitations except for the panel having a thickness in the range of about 100-180 mil. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Kim's panel to show the panel having a thickness in the range of about 100-180 mil because such a modification would have involved a mere change in the size of a component; a change in size is generally recognized as being within the level of ordinary skill in the art, In re rose, 105 USPQ 237 (CCPA 1955).

Claims 25-26 lack an inventive step under PCT Article 33(3) as being obvious over Kim (6460304).

Kim shows all the claimed structural limitations except for the fabric being aramid fibers or polyester fibers. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Kim's fabric to show the fibers being aramid or polyester because it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use a matter of obvious design choice, In re Leshin, 125 USPQ 416.

Claim 27 lacks an inventive step under PCT Article 33(3) as being obvious over Kim (6460304).

Kim shows all the claimed limitations except for the panels having a steel channel and a plurality of fasteners adapted to fasten the steel channel and the one or more panels to a wall of the structure.

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Kim's structure to show the panels having a steel channel and a plurality of fasteners adapted to fasten the steel channel and the one or more panels to a wall of the structure because it would enable the easy attaching of the panels to a wall, and using steel channels with fasteners to attach a panel to a wall is known in the art as demonstrated by the attachment of windows, skylight in buildings.

NOTES TO FORM PCT/ISA/220 (continued)

The letter must indicate the differences between the claims as filed and the claims as amended. It must, in particular, indicate, in connection with each claim appearing in the international application (it being understood that identical indications concerning several claims may be grouped), whether

- (i) the claim is unchanged;
- (ii) the claim is cancelled;
- (iii) the claim is new;
- (iv) the claim replaces one or more claims as filed;
- (v) the claim is the result of the division of a claim as filed.

The following examples illustrate the manner in which amendments must be explained in the accompanying letter:

- 1. [Where originally there were 48 claims and after amendment of some claims there are 51]: "Claims 1 to 29, 31, 32, 34, 35, 37 to 48 replaced by amended claims bearing the same numbers; claims 30, 33 and 36 unchanged; new claims 49 to 51 added."
- 2. [Where originally there were 15 claims and after amendment of all claims there are 11]: "Claims 1 to 15 replaced by amended claims 1 to 11."
- [Where originally there were 14 claims and the amendments consist in cancelling some claims and in adding new claims]:
 "Claims 1 to 6 and 14 unchanged; claims 7 to 13 cancelled; new claims 15, 16 and 17 added." or
 "Claims 7 to 13 cancelled; new claims 15, 16 and 17 added; all other claims unchanged."
- 4. [Where various kinds of amendments are made]: "Claims 1-10 unchanged; claims 11 to 13, 18 and 19 cancelled; claims 14, 15 and 16 replaced by amended claim 14; claim 17 subdivided into amended claims 15, 16 and 17; new claims 20 and 21 added."

"Statement under Article 19(1)" (Rule 46.4)

The amendments may be accompanied by a statement explaining the amendments and indicating any impact that such amendments might have on the description and the drawings (which cannot be amended under Article 19(1)).

The statement will be published with the international application and the amended claims.

It must be in the language in which the international application is to be published.

It must be brief, not exceeding 500 words if in English or if translated into English.

It should not be confused with and does not replace the letter indicating the differences between the claims as filed and as amended. It must be filed on a separate sheet and must be identified as such by a heading, preferably by using the words "Statement under Article 19(1)."

It may not contain any disparaging comments on the international search report or the relevance of citations contained in that report. Reference to citations, relevant to a given claim, contained in the international search report may be made only in connection with an amendment of that claim.

Consequence if a demand for international preliminary examination has already been filed

If, at the time of filing any amendments and any accompanying statement, under Article 19, a demand for international preliminary examination has already been submitted, the applicant must preferably, at the time of filing the amendments (and any statement) with the International Bureau, also file with the International Preliminary Examining Authority a copy of such amendments (and of any statement) and, where required, a translation of such amendments for the procedure before that Authority (see Rules 55.3(a) and 62.2, first sentence). For further information, see the Notes to the demand form (PCT/IPEA/401).

Consequence with regard to translation of the international application for entry into the national phase

The applicant's attention is drawn to the fact that, upon entry into the national phase, a translation of the claims as amended under Article 19 may have to be furnished to the designated/elected Offices, instead of, or in addition to, the translation of the claims as filed.

For further details on the requirements of each designated/elected Office, see the PCT Applicant's Guide, Volume II.